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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,454	02/07/2001	Fumin Lu	8988.3826	3410

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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 11/06/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

AS2

Office Action Summary

Application No.

09/778,454

Applicant(s)

LU, FUMIN

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/07/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The Specification does not define the term “R.V.” or “PA6” or give the units for melt flow rate, intrinsic viscosity, and R.V.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2, 4, 6 and 8 are rejected due to their dependency on independent claims.

Claims 1 and 7 are unclear because the units for MFR are not given. Claim 3 is unclear because the units for intrinsic viscosity are not given. Claim 5 is unclear because the units for R.V. is not given. For the purposes of examining the application at this time, the Examiner will assume the Applicant's numbers are in standard units for each measurement.

In claim 1, the Applicant does not explain the meaning of the term “PP”. Does it stand for polypropylene? For the purposes of examining the application at this time, the Examiner will assume that the Applicant means polypropylene.

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In claim 5, the Applicant does not explain the meaning of "PA6". Does it stand for nylon 6? For the purposes of examining the application at this time, the Examiner will assume that the Applicant means nylon 6.

In claim 7, the Applicant does not explain the meaning of the term "R.V.". Does it stand for relative viscosity? If so, relative viscosity is defined as the viscosity value of a non-Newtonian material at a defined shear rate, therefore, the Applicant must define a shear rate in the claim as well. For the purposes of examining the application at this time, the Examiner will assume that the Applicant means relative viscosity.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 7 – 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Ofosu et al. (US 6,268,302).

Ofosu teaches a soft and strong nonwoven spunbonded polyolefin fabric which is a multi-layer laminate of a first web of high melt flow polymer fibers and a second web of low melt flow polymer fibers (column 1, lines 41 – 45). The polyolefin used in the invention can be polyethylene (column 7, lines 23 – 25). The web of high melt flow polymer fibers is produced

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from polyolefin polymer having a melt flow rate of at least 50 grams/10 minutes (column 1, lines 47 – 50). The nonwoven fabric may be used in products such as garments, personal care products, medical products, protective covers and outdoor fabrics (column 1, lines 64 – 67). It can be assumed that the fabric has excellent liquid barrier properties and air breathability due to the end use of the fabric. The spunbonded fabric is made from a spunbonded process in which melted polymer is extruded to a spinneret, fiberized, quenched with air, drawn and deposited to form a nonwoven fabric (column 4, lines 45 – 56).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 – 2 and 3 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (US 5,688,468) in view of Ofosu et al. (US 6,268,302).

As to claims 1 and 2, Lu teaches a process for producing a non-woven polymeric fabric web such as a spunbond web, having filaments of 0.1 to 5 denier with equivalent production rate (Abstract). Lu teaches in Example 2 a polypropylene 35 MFR (melt flow rate) is spun at a speed of 6,400 meters per minute. The filaments are drawn from the drawing unit and merged on the surface of a web forming table (column 8, lines 57 – 67 and column 9, lines 1 – 12).

Lu fails to teach that the fabric can contain multiple layers with at least one layer containing a polypropylene with a melt flow rate higher than 100 grams/10 minutes.

Oforu et al. teaches a multi-layer spunbonded nonwoven fabric with superior strength and softness (Abstract). One layer of the spunbonded nonwoven fabric is made from high melt flow polymer fibers is produced from polyolefin polymer having a melt flow rate of at least 50 grams/10 minutes (column 1, lines 47 – 50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a high melt flow polypropylene with a flow rate of least 50 grams/10 minutes as suggested by Oforu et al. in the spunbonded web of Lu motivated by the fact that high melt flow rates allow fibers to be drawn more highly than otherwise, producing very fine spunbond fibers, thus softer material. Additionally, lower viscosity or high melt flow rate polymers enable more polymer to flow at the bond points during bonding, thus ensuring a strong bond, while retaining the advantage of softness which smaller fibers also give (Oforu et al., column 5, lines 38 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a non-woven spunbonded fabric with more than one layer as suggested by Oforu et al. motivated by desire to increase the strength of the fabric while imparting other characteristics like added loft, softness, wicking capabilities, liquid impermeability, air breathability or decoration.

As to claims 3 – 6, Lu teaches a process for producing a non-woven polymeric fabric web such as a spunbonded web, having filaments of 0.1 to 5 denier with equivalent production rate (Abstract). As to claim 3, Lu teaches in Example 3 a polyethylene terephthalate is spun at a speed of 8,000 meters per minute. The filaments are drawn from the drawing unit and merged on the surface of a web forming table (column 8, lines 57 – 67 and column 9, lines 1 – 12). As to claim 5, it is known in the art that nylon including nylon 6 (PA6) is conventionally melt spun

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(column 1, lines 39 – 42), therefore it would be reasonable to assume that nylon 6 (PA6) could be spun with Lu's process at a high speed above 4,000 meters per minute just like the examples discussed of polypropylene and polyethylene terephthalate.

Lu fails to teach that the fabric can contain multiple layers as required by claims 4 and 6. Lu fails to teach that at least one layer is produced from a polyethylene terephthalate with an intrinsic viscosity of less than 0.55 as required by claim 3. Lu fails to teach that at least one layer is produced from nylon 6 (PA6) with an R.V. below 2.2 from a spinneret as required by claim 6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a non-woven spunbonded fabric with more than one layer as suggested by Ofosu et al. motivated by desire to increase the strength of the fabric while imparting other characteristics like added loft, softness, wicking capabilities, liquid impermeability, air breathability or decoration.

As to claim 3, although Lu in view of Ofosu et al. does not explicitly teach the claimed an intrinsic viscosity of less than 0.55, it is reasonable to presume that an intrinsic viscosity of less than 0.55 is inherent to Lu in view of Ofosu et al. Support for said presumption is found in the use of like materials (i.e. polyethylene terephthalate resin extruded at high speeds) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of an intrinsic viscosity of less than 0.55 would obviously have been present once the Lu in view of Ofosu et al. product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to providing of this rejection made above under 35 USC 102. One would have been motivated to use a polyethylene terephthalate polymer with an intrinsic viscosity less than 0.55 in order to produce very fine

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spunbond fibers, thus softer material. Additionally, lower viscosity polymers enable more polymer to flow at the bond points during bonding, thus ensuring a strong bond, while retaining the advantage of softness which smaller fibers also give (Ofosu et al., column 5, lines 38 – 60).

As to claim 5, although Lu in view of Ofosu does not explicitly teach the claimed R.V. below 2.2, it is reasonable to presume that a R.V. below 2.2 is inherent to Lu in view of Ofosu. Support for said presumption is found in the use of like materials (i.e. nylon (PA6) extruded at high speeds) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of R.V. below 2.2 would obviously have been present once the Lu in view of Ofosu product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to providing of this rejection made above under 35 USC 102. One would have been motivated to use a nylon 6 (PA6) with a R.V. below 2.2 in order to produce very fine spunbond fibers, thus softer material. Additionally, lower viscosity polymers enable more polymer to flow at the bond points during bonding, thus ensuring a strong bond, while retaining the advantage of softness which smaller fibers also give (Ofosu et al., column 5, lines 38 – 60).

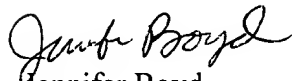
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday 8:00 am - 4:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
October 24, 2002


TERREL MORRIS
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